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ABSTRACT

This document is the fifth volume in a set of five Career Education Measurement Handbooks intended to help local education personnel in measurement and evaluation. Divided into seven chapters, this handbook is designed to provide practical guidelines for using observational techniques to take readings of the feelings, perceptions, and reactions of those persons involved or affected by a project. The first chapter provides an introduction and overview of the handbook. Chapter 2 provides some insight as to what can be evaluated. Chapter 3 presents a number of ways for systematically collecting data by observing, interviewing, and gathering data unobtrusively. The fourth chapter presents some ideas and insights to be considered when using the techniques discussed in chapter 3. Chapter 5 discusses ways of organizing, analyzing, and justifying the use of the data collected. Suggestions and exercises are provided in chapter 6 to increase the evaluators's ability to effectively observe and record events. Finally, chapter 7 presents a brief summary of the information contained in this handbook and nine checklists to help the user both review this information and plan systematic observations. A selected bibliography is also included. (BM)

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Research & Development Series No. 169

CAREER EDUCATION MEASUREMENT HANDBOOKS

USING SYSTEMATIC OBSERVATION TECHNIQUES IN EVALUATING CAREER EDUCATION

Ralph J. Kester

The National Center for Research in Vocational Education
The Ohio State University
Columbus, Ohio

1979

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

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FOREWORD

Educators have often been criticized for viewing their role merely as dispensers of knowledge and showing a lack of concern with the application and relevance of this knowledge to their students' future lives. However, the general public has begun to accept the idea that the educational system has a responsibility to assist *all* individuals in making orderly transitions to the world of work. Additionally, during the last decade, a number of innovative activities, projects, and/or programs have been developed at the federal, state, and local level in which personnel are attempting to link education and work. Among these programs and/or projects are the following examples: career education, Experience-Based Career Education (EBCE), Part D exemplary projects and other projects in vocational education, Title IV-C of the Elementary and Secondary Education Act (ESEA), Fund for the Improvement of Post Secondary Education (FIPSE), Title I and III of the Comprehensive Employment and Training Act (CETA), etc.

Personnel associated with education and work programs are becoming increasingly aware of the need for information related to accountability and needed improvements. Many reports—some informal, some in the literature—indicate a wide and exciting variety of approaches to evaluating programs that link education and work. However, the need exists for practitioners to become acquainted with evaluation ideas and materials available for particular situations.

Recognizing these trends, the Education and Work Group of the National Institute of Education (NIE) contracted with the National Center for Research in Vocational Education (NCRVE) to develop the *Career Education Measurement Series.* The series includes five comprehensive "user oriented" handbooks intended to help local education personnel in measurement and evaluation. The handbooks in the series are:

- *Assessing Experiential Learning in Career Education*
- *Career Education Measures: A Compendium of Evaluation Instruments*
- *Improving the Accountability of Career Education Programs: Evaluation Guidelines and Checklists*
- *A Guide for Improving Locally Developed Career Education Measures*
- *Using Systematic Observation Techniques in Evaluating Career Education*

This handbook, *Using Systematic Observation Techniques in Evaluating Career Education,* is designed to provide practical guidelines for using observational techniques to take "readings" of the feelings, perceptions and reactions of those persons involved in or affected by your projects. Furthermore, the handbook provides specific observation techniques that are well accepted as providing objective information for improving career education projects.

The Center is particularly indebted to Dr. Ralph Kester, former specialist at The Center and now Chairman of the Education Department at Greenville College, Greenville, Illinois, who prepared this handbook. Special recognition should be given to Dr. N. L. McCaslin, project director, who

coordinated the project. Additionally, appreciation is extended to Ms. Cheryl Lowry who edited the handbook. A special note of thanks is extended to Dr. Ron Bucknam who originally conceived this handbook series and continued his involvement through their development as Project Officer for the National Institute of Education.

Valuable advice in the original conceptualization of the handbook was received from an advisory committee composed of Dr. Robert Ebel, Michigan State University; Dr. Margaret Ferqueron, State Director of Career Education in Florida; and Ms. Deede Sharpe, Georgia Department of Education.

In an attempt to make this handbook truly "user oriented," the National Center is indebted to Drs. Fred and Murial Frank who reviewed the first draft and made suggestions prior to the user trials. Additionally, credit is given to those career education practitioners who participated in the user trial prior to publication. With their valuable assistance, the utility of this handbook has been enhanced. These individuals included:

Samuel W. Corsi, Jr., Board of Cooperative Educational Services, Castleton-on-Hudson, N.Y.
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Finally, a special note of appreciation is extended to Ms. Marlene Linton who typed the manuscript of this publication.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

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CHAPTER 1

INTRODUCTION

What does this handbook have to do with you?

If you are like most career education project directors, you probably have neither the time nor the expertise necessary to conduct extensive evaluation studies of the activities you direct. Furthermore, you may believe that many evaluations do not tell the complete story about educational projects. But despite that belief and your lack of time and expertise, you still must somehow find out what effects your project is having. That's why this handbook was written.

The handbook has been designed to provide some practical guidelines as to how you can deal with the evaluation responsibilities you face as an educational leader. While not intended to make you an evaluation expert, it should enable you to use respected data collection methods that can help you take a "reading" of the feelings, perceptions, and reactions of those involved in or affected by your project. More specifically, it should help you:

- Collect information that can help you make decisions about the most valuable and worthwhile aspects of the project so as to better respond to the needs of accountability, continuance decisions, and modifications.
- Collect information that can help you identify problem areas before they become critical to the continuance or effectiveness of the project.
- Discover influences and effects of the project that were not anticipated before the project began.
- Use the descriptive information you collect so that, like numerical data, it contributes to a meaningful comprehensive picture of what happened, with what effect, and perhaps with some clues as to why it happened.

Our view of evaluation

Since evaluation has been defined in many ways, no attempt is made here to provide the "ultimate" definition. However, it is important that some focus be provided so that you can better understand how to use the guidelines provided in this handbook.

Evaluation, for our purposes, is defined as the process of (1) identifying key aspects of a career education project, (2) collecting pertinent

information concerning those aspects, and (3) presenting the information so that it can help you and others decide whether the project is successful and whether any parts of it need improvement.

The need for alternative evaluation techniques

Defining evaluation in this manner allows the use of a variety of techniques for collecting information upon which to make decisions about the project. When educators think of evaluation techniques, many times we envision questionnaires and mountains of statistics. Questionnaires can certainly be a part of evaluation, and statistics are essential to making sense out of numerical data. However, the ever-present lack of time and money will surely mean that many decisions you will make about your project will be based simply on what you have seen, heard, or even how you "feel" about certain parts of the project rather than on data gathered with questionnaires and then analyzed statistically. That's where this handbook can help you. By helping you sharpen your skills of observation, it can make it possible for you to evaluate your project in ways that are both feasible and meaningful.

We try to point out how you can increase the amount and quality of data you gather through whatever contact you may have with project personnel or activities. Also, some suggestions are provided as to how you can multiply your information by getting others associated with the project involved in collecting and sharing information with you.

The data collection techniques to be discussed

We will focus attention on three basic ways to collect information: (1) observing verbal and nonverbal behavior, (2) interviewing, and (3) gathering data unobtrusively. When actually collecting data, you may use a mixture of these techniques without distinguishing between them at the time.

These three forms of data collection are complementary to other forms such as questionnaires, standardized tests, or paper and pencil surveys. But separating these three forms of data collection (observing, interviewing, and gathering data unobtrusively) helps pinpoint important things to consider about each of them. It should help you to decide when and how to use a particular combination of these techniques in obtaining certain kinds of information.

How the handbook is organized

There are six other chapters that follow this introductory chapter:

- Chapter 2 provides some insight as to what can be evaluated.
- Chapter 3 presents a number of ways for systematically collecting data by observing, interviewing, and gathering data unobtrusively.
- Chapter 4 shares some ideas and insights to be considered when using the techniques discussed in Chapter 3.

- Chapter 5 discusses ways of organizing, analyzing, and justifying the use of the data collected.

- Chapter 6 gives some rather concrete suggestions and exercises to increase your ability to effectively observe and record events.

- Chapter 7 presents a brief summary of the information contained in this handbook and nine checklists to help you both review the information and plan your systematic observations.

In addition, the Selected Bibliography at the end of this handbook identifies over fifteen other resources that deal with systematic observation techniques.

CHAPTER 2

WHAT CAN BE EVALUATED?

Introduction

There have been quite a number of articles and books directed specifically at the question: What can be evaluated in career education programs and projects? It is not our purpose to completely answer the question; we can only provide some insights that should prove useful as you try to find out what is happening in your career education project. We think these insights will be particularly useful in regard to the three major types of data collection techniques discussed in this book—observing, interviewing, and gathering data unobtrusively.

Anticipated and unanticipated outcomes

We have previously defined evaluation as a process of (1) identifying key aspects of a career education project, (2) collecting pertinent information concerning those aspects, and (3) presenting the information so that it can help you and others decide whether the project is successful and whether parts of it need improvement.

The information you will be collecting and presenting will largely concern the outcomes of your project or any portion of it. (Outcomes aren't considered to occur only at the end of a project; they can be defined incrementally so that they can occur at all logical points during the conduct of the project.) You will be trying to find out whether your project, or parts of it, accomplished the objectives you intended. However, education projects almost always have outcomes that were not intended or anticipated. Any evaluation effort, therefore, must take into account both anticipated and unanticipated outcomes. If no attempt were made to look for unanticipated outcomes, they would simply go unnoticed or be so vaguely referred to in impressions from other data sources as to be of no value to you. Often an evaluation that focuses only on anticipated outcomes must come to the disappointing conclusion that nothing "significant" occurred even though there are strong feelings that *something,* either good or bad, did result from the project.

Anticipated and unanticipated influences

In addition to the outcomes, there are anticipated and unanticipated influences—influences that can affect the conduct and perhaps outcomes of the project. Evaluation procedures that result in the discovery of unanticipated influences can be useful in providing explanations of why anticipated outcomes did not occur.

Used conscientiously the systematic observation techniques discussed in this handbook can greatly assist you in determining the effect of

anticipated influences and to what extent anticipated outcomes occured. They should also provide information leading to the discovery of unanticipated outcomes and influences.

To believe it unnecessary to look for the unanticipated or search for information as to why anticipated outcomes did not occur is to assume that the implementation of a career education project is a mechanical process, with all the laws of human action and interaction quite well defined. Even people who work on innovations for cars don't have it that good. Therefore, until we have a much clearer understanding of human nature and the learning process, it behooves us to use every means available to gather and analyze as much retrievable information as possible in directing and evaluating career education projects in schools. To not do so will retard the progress of understanding, as well as set ourselves up for some disappointing and frustrating times when we just have to sit and wonder about what happened.

What can be anticipated in an evaluation?

The anticipated aspects of any evaluation effort are the intended outcomes and anticipated influences. It needs to be emphasized that when we speak of outcomes, we are not referring only to those which occur at the end of the project. Outcomes or results may be identified at any point and with any group associated with the project.

In the area of intended outcomes, the project's activities and objectives should provide some direction. In the absence of clearly defined objectives, the following potential outcomes for career education as they relate to observing, interviewing, and gathering data unobtrusively might provide some direction for the evaluation to take initially.

- The following outcomes are just a sample of potential behaviors that could be intended or unintended focal points and that could be particularly appropriate for *evaluation by observing verbal and nonverbal behavior:*
  - Students' work habits in or outside the classroom
  - Students' productivity in or outside the classroom
  - Students' alienation or compatibility with work situations in or outside the classroom
  - Students' social behavior in work settings in or outside the classroom
  - The relations between students and teachers—classroom atmosphere and work orientation
  - The manner in which work or career decisions or patterns are presented

- Teachers' encouragement of racial, sexual, or socioeconomic stereotypes as they relate to vocational planning and preparation
- Interactions among teachers concerning the role and process of teaching career education
- The methods, duration, and intensity of teaching career education

- Other outcomes such as information about affective and/or cognitive outcomes can be best gathered through the use of techniques like *interviews and surveys* and include:
  - Students' self-awareness, exhibited by: (1) their recognition of their interests, aptitudes, talents, and achievements in relation to various work or career goals; (2) their understanding of their own place in society; (3) their knowledge of the forces that influence their career development; and (4) their application of their values in decision-making situations
  - Students' awareness of and ability to understand or apply general educational skills to work situations outside the formal classroom
  - Students' awareness of and ability to understand or apply economic theory and practice to decisions about desired work roles and general aspects of the world of work
  - Students' decision-making skills concerning their work and career goals
  - Students' demonstration of skills needed to obtain employment
  - Students' understanding of the concepts of job, work, occupation, vocation, and career
  - Students' application of various information (e.g., self-knowledge, specifications of the occupation or work role, culture or life-style of the occupational role) when making a work or career decision

- Still other outcomes sought through career education activities can be assessed through less direct methods such as *unobtrusive measures* and include:
  - Teachers' ability to incorporate career education concepts in their classroom (e.g., bulletin boards, lesson plans, displays)
  - Teachers' professional development activities related to career education responsibilities
  - Teachers' efforts to update career education information presented (e.g., new equipment used in the work setting, skill requirements for entry level jobs)

- Students' performance on standardized achievement tests
- Students' respect for property (e.g., buildings, equipment)
- Students' attendance at extracurricular career education activities

In summary, what effects on the project itself—the content or procedures—can be identified?

The list of outcomes for career education above may seem long and rather involved, but you would probably like to have the answers to these and many more outcomes. It is important that you anticipate the kinds of outcomes you are likely to want information about. Otherwise, you will have to wait for the questions to "appear" (or be imposed) and then search for some reasonable way of answering them. This handbook suggests that you devise as comprehensive a systematic data collection scheme as possible. Then, as the program operates, you can collect data by the methods discussed here in order to take "pictures" of the events, outcomes, and general activity associated with the program. From periodic analyses of such data you can glean information that will give you tremendous help not only in answering the predetermined questions, but in discovering the unanticipated and in raising new questions. How this can be done and discussion concerning the tools and procedures you use to collect the data is precisely what is covered in subsequent chapters.

CHAPTER 3

SYSTEMATIC OBSERVATION TECHNIQUES

Introduction

Our discussion of techniques will cover three basic methods: (1) observing verbal and non-verbal behavior, (2) interviewing people, and (3) gathering data unobtrusively. The information provided for each of the three methods will be:

- A definition of the method
- Descriptions and illustrations of its use—that is, specific techniques
- Possible applications to evaluating career education projects
- A discussion of the confidence one can establish in its use

Observing people

Definition

Observing is a primary and fundamental technique that undergirds all of the others discussed in this chapter. In fact, one could easily make the case that all forms of data collection are simply derivatives of observation. With this in mind, what will be discussed in this section will be more in the area of personally watching or listening to an individual or group and accurately recording what was done or said.

In the research and evaluation literature, some labels for observation techniques are: participant observation, enumeration, and interaction analysis. The role you play as an observer varies according to: (1) the extent to which you actually participate in group activities and (2) how aware members of the group are that you are observing them for evaluative purposes.[1] Figure 1 shows how you can expect to be perceived by the group, given various combinations of your degree of participation and the degree to which the members realize you are an observer.

Specific Techniques

As a project director, you are obviously part of the project. However, various groups with whom you work may view your actual participation

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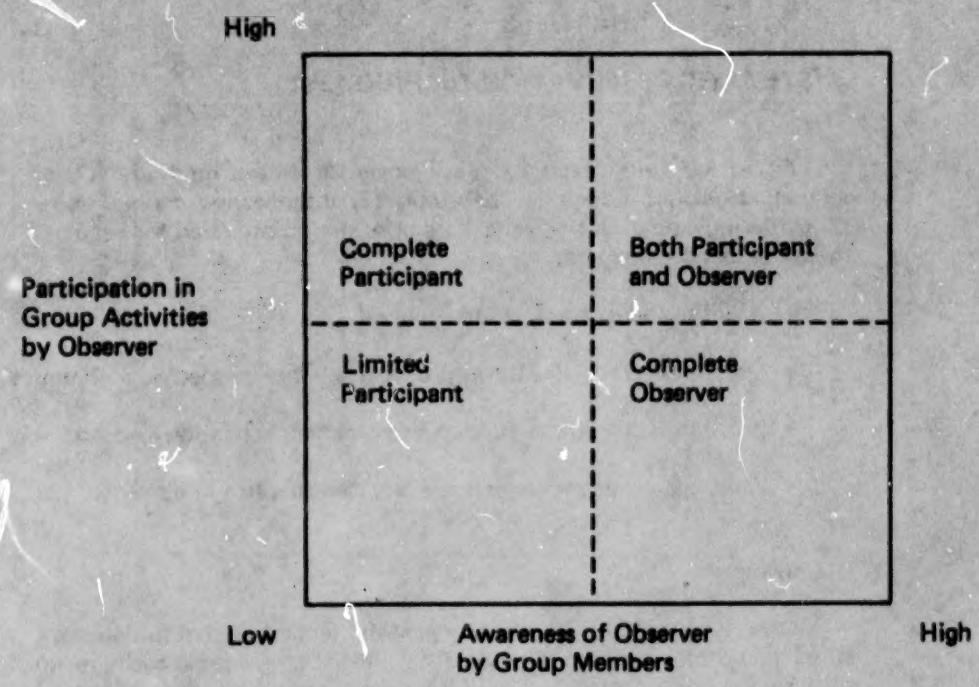
[1] Raymond L. Gold, "Roles in Sociological Field Observations," *Social Forces*, Vol. 32 (1958), pp. 217-223; and Frank W. Lutz and Lawrence Iannaccone, *Understanding Educational Organizations: A Field Study Approach* (Columbus, Ohio: Charles E. Merrill Publishing Company, 1969).

Figure 1

PERCEPTION OF OBSERVER BY THOSE BEING OBSERVED



with them differently. Some individuals will immediately accept you. Others will not accept you as readily. As will be pointed out in Chapter 4, how you are perceived by those you observe or how you gain access to observe them can be critical to how they behave.

Your being the project director does not guarantee you immediate access to all parts of the project. You must use all your abilities to see, listen, think, feel, and record the events, actions, interactions, and other situational or circumstantial information. Such information can provide quite a complete picture as to just exactly what happened. The simple but ultimate test of the adequacy of an observational account is to ask whether a person reading it could then behave appropriately as a member of the group observed, or whether he/she can anticipate and interpret what occurs in the group as well as its own members can (Wolcott, 1975).

As far as the actual process of recording observations goes, you are limited only by what is to be observed and your ingenuity in devising a legitimate way of conscientiously and systematically recording the observations. Exhibits 1 to 6 provide illustrations of forms or techniques you could devise to actually record data.

Exhibit 1

OPEN-ENDED OBSERVATION

Possible Use: This type of device could be used when little or no structure is being used to guide the observation, which is particularly appropriate when trying to determine the extent to which students are developing work habits and attitudes. It should allow the observer to keep track of what students and teachers are saying and doing related to work habits and attitudes. As a result of the actual observations or dialogue, you could then react to the extent that work habits and attitudes are being established.

Actual Observations or Dialogue	Feelings or Impressions about What Was Done or Said
(This section should contain only the account of what is actually observed or said. No judgments or evaluations should be listed in this side of the observational record.)	(This side should contain the emotional response or interpretation that the observer had about what he/she saw or heard.)
• Students were all actively involved in designing posters related to possible careers.	The teacher had command of the students' attention and all were exhibiting very positive relationships with one another and each person seemed to be cooperating
• "That would be a terrible career, I can't stand to get my hands dirty."	Students were free to express their opinions and were making judgments about how they would feel in particular careers.
• "I wish we would hurry up and get these posters done."	This student was not able to focus on the real purpose of the activity. She seemed to be only interested in complying with the teacher's directions.
• One student did not have any pictures and was asking others for some he could use.	This student was not prepared—I'm not sure how dependable his work habits might be.

Exhibit 2

INTERACTION ANALYSIS[2]

Possible Use: Interaction analysis is a way of describing what goes on in an environment or setting.

Flanders' interaction analysis is one of the most widely known and researched techniques. The first step in using interaction analysis is to develop observation categories that represent typical behaviors and to assign index (or code) numbers to each category. The second step is to observe behaviors and record them by index number. The third step is the arrangement of those numbers representing behavior categories into a matrix that will be useful as you try to interpret what went on. The fourth, and final step is interpretation.

Let us assume that one of the purposes of a career education project is to encourage more interaction between students and employers and to discourage employer dominated situations. The use of interactive analysis could be used to monitor the extent to which the desired interaction is occurring.

Step 1: OBSERVATION CATEGORIES – In developing observation categories, it will be necessary to define the categories to be mutually exclusive but, as a whole, to accommodate as many kinds of behavior as you are likely to find in your observations. The categories should be grouped in terms of the people exhibiting the behavior in the categories (i.e., student behaviors covered in categories 1-5, employer behavior in categories 7-10). It is important that you memorize the categories and their corresponding index numbers; otherwise it will be impossible for you to record your observations rapidly enough. An example of such an observation category system and the index numbers assigned to each could include the following:

Index Number		
1	Student Behavior	Students asking question
2		Students responding to question
3		Students initiating comment
4		Students responding to comment
5		Students making irrelevant noise
6		Silence
7	Employer Behavior	Employer dominating conversation
8		Employer asking question
9		Employer responding to question
10		Employer commenting

---

[2] Also see: N. A. Flanders, *Analyzing Teaching Behavior* (Reading, Massachusetts: Addison-Wesley, 1970); and Murray Melvin, "Field Methods and Techniques: The Action-Interaction Chart as a Research Tool," *Human Organization,* Vol. 12, No. 2 (Spring 1953), pp. 34-35.

Exhibit 2 — Continued

Step 2: OBSERVING AND RECORDING BEHAVIOR — Before beginning observations, you need to determine (a) how often you will use this technique, (b) how long you will spend observing during each session, and (c) how often will you sample specific behavior. In our example, this is the first of four observations of fifteen minutes each, recording specific behaviors every ten seconds. As you observe the situation, you would record the index number associated with the category of behavior that is occurring, making a record about every ten seconds. In this way you might end up with a listing of index numbers such as the following:

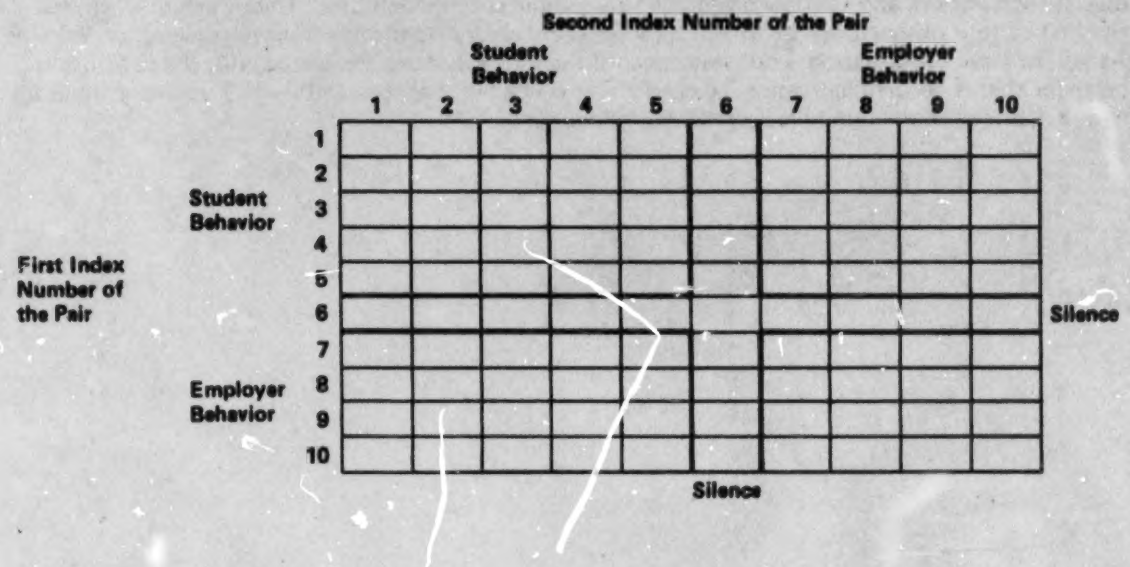
6
7
7
7
1
1
1
9
9
9
3
3
10
10
10
— and so forth until fifteen minutes have elapsed or until ninety observations have been made.

Step 3: ARRANGEMENT OF OBSERVATIONS — The first activity of this step is to arrange your recorded index numbers in pairs. To do this the first two numbers are paired together. Then the second and third numbers are paired together. Next, the third and fourth numbers are paired together, and so forth. In our example, these pairs would be as follows:

6-7
7-7
7-7
7-1
1-1
1-1
1-9
9-9
9-9
9-3
3-3
3-10
10-10
10-10
and so forth

Exhibit 2 — Continued

The second activity of this step is to arrange the pairs of numbers in a matrix for interpretation. The matrix that results from our example could be displayed as follows:



Begin with the first pair of numbers. Find the first number of that pair (in our example it is 6) and locate it in the column of index numbers to the left of the matrix. Follow the row opposite that number across the matrix to the column that is headed by the second number of the pair (in our example, 7). Make a tally mark in that cell of the matrix. (Tally marks have been placed for the first two pairs of our example in the matrix below).

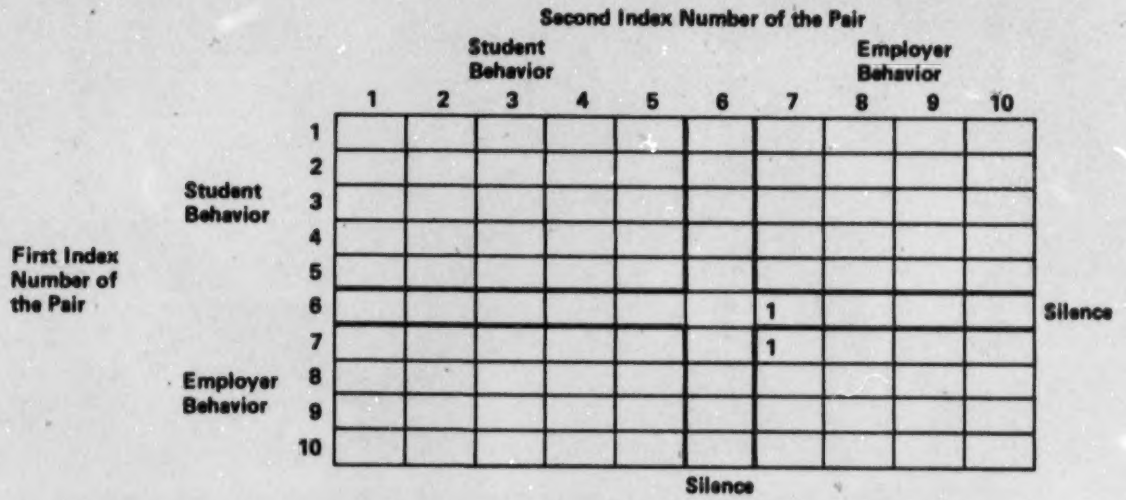
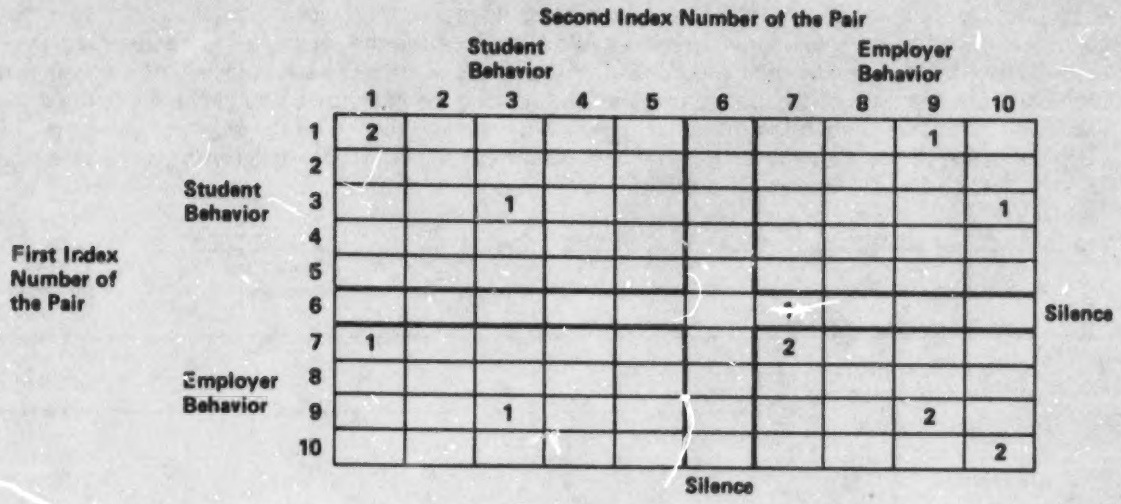


Exhibit 2 – Continued

Continue the process until you have dealt with all pairs of your index numbers. Then count the tally marks in each cell, replacing the marks with a number that represents the total of tally marks in each. (The matrix below has been completed for all index numbers in our example.)



Step 4: INTERPRETATION – In our example, we wanted to encourage more interaction between students and employers. Furthermore, we wanted to discourage employer dominated situations. If this were to occur we would expect to have a lot of cells filled in the upper right and lower left quadrants of the matrix because totals in these cells reflect behavior that involved movement from student behavior to employer behavior and vice versa. Therefore, the totals in cells in the upper right quadrant reflect student-employer interactions and those in the lower left quadrant reflect employer-student interactions. Also, we would expect fewer cells to be filled in the lower right quadrant. Examination of the last matrix presented in Step 3 suggests that we did not achieve our goal for this first observation. However, you need to repeat this type of observation three more times as previously planned to actually have any confidence in the results. In addition to providing effectiveness data about the career education project, this technique also provides feedback to the teacher regarding performance in achieving the desired goals of the project.

Exhibit 3

ISOLATED BEHAVIOR ENUMERATION

Possible Use: This form of observation could be used when you have rather specific singular behaviors you desire to enumerate. The behaviors must be well defined.

If you desire, for instance, to determine how often students or the teacher of a class refer to certain concepts related to the world of work, you could simply define the categories to be observed, systematically record the frequency and duration of each occurrence of each category of behavior, and then compute the ratio of frequency to duration. Among the categories you may have defined to use in our examples concerning references to certain concepts related to the world of work may be: (1) mentioning the terms work or job in a context other than classroom assignment work, and (2) mention of specific careers or job titles.

	Behavioral Category		Frequency	Time Span Observed	Frequency / Minutes
1.	Mentions the term work or job other than that related to class assignment work	Teacher			
		Student			
2.	Mentions specific careers or job titles	Teacher			
		Student			
3.		Teacher			
		Student			
4.		Teacher			
		Student			
5.		Teacher			
		Student			
6.		Teacher			
		Student			

Exhibit 4

MAPPING ACTIONS

Possible Use: Mapping actions is an observation approach to recording the movement of all or certain persons in a group.

This observation technique could be used, for example, to determine the extent to which students are using a career center in a classroom. You could "code" the person or persons on which you wish to keep track in a manner similar to the following:

x	Bob	⊡	Bill
0	Sally	⊡	June
⊠	Jim		
●	Teacher		

You could also code certain types of actions, but it gets rather difficult to keep track of all of this after a while. The rule is "keep it simple."

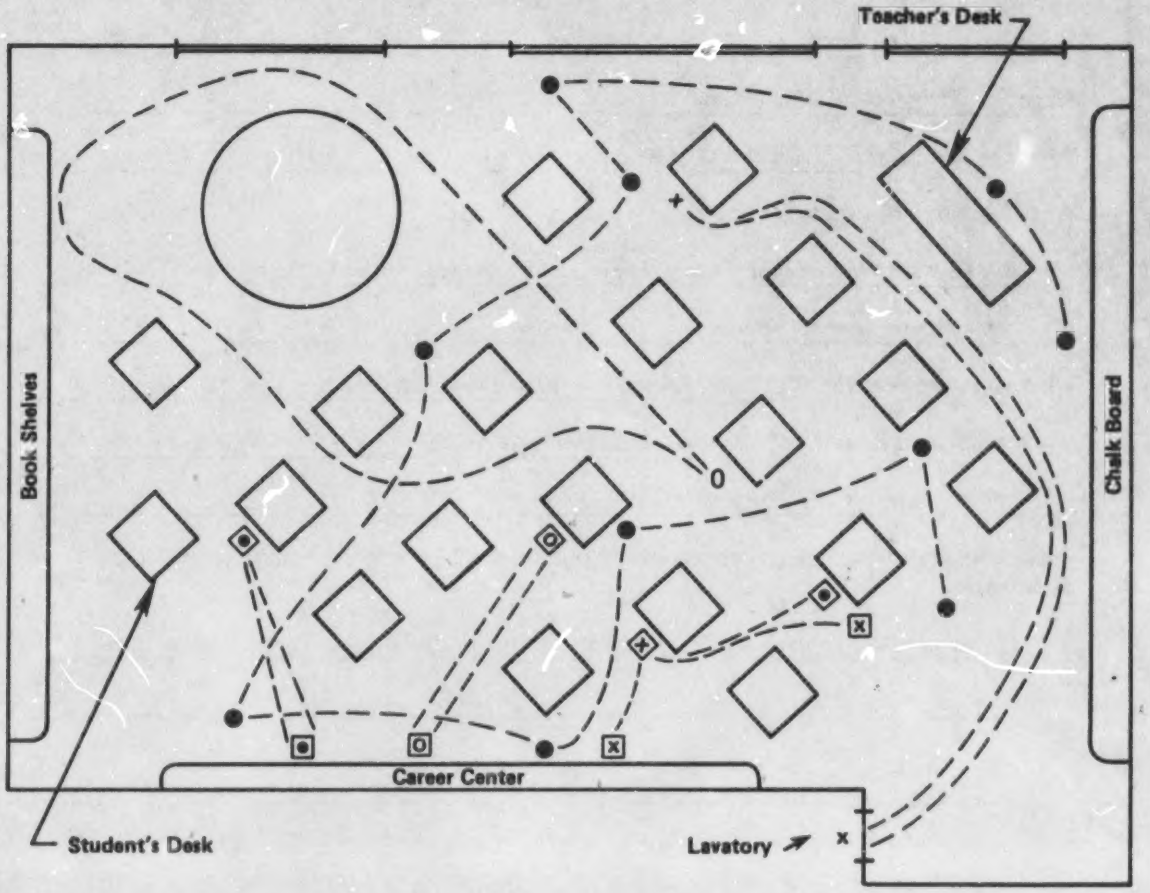


Exhibit 5

CRITICAL EVENT RECORDING

Possible Use: Critical events have been defined in numerous ways. One definition is simply any event or incident that may have had some potential influence on the program. One convenient aspect of critical event recording is that its use is not limited to the project director. Almost any actor within a program could be involved in recording such events.

Each recording of a critical event should contain the basic information of who did (or said) what, when, where, to whom (or in the presence of whom), with what apparent reaction. Later, the event can be followed-up as to any "ripple" effects or actions taken. It can be used effectively to monitor student problems and attitudes.

Sample 1:

Critical Event Form

Recorder *J. Jones* Date *4/4/77* Time *2:30 pm*

Place *9th grade algebra class* Context _____

Who was involved? *Bill Smith, a freshman; and Mr. Brown, a freshman algebra teacher*

What was done or said to whom (or in whose presence)?

Bill told Mr. Brown that he couldn't see why someone should take algebra and the rest of the students listened.

What were the reactions? *Mr. Brown said that it was required by the school board.*

What action was taken? *Mr. Brown did not satisfy Bill's question and Bill subsequently did not listen to the remainder of the class.*

What were your impressions concerning its potential effect on the program (positive or negative)?

Mr. Brown lost an excellent opportunity to show how algebra is related to an area of special interest to Bill.

Exhibit 5 – Continued

Sample 2:

Critical Event Report[3]
Description of Actors, Activity, Decision, or Event Anticipated (Why?) Unanticipated (Why?) Likely Consequences: Use the reverse side for additional comments if necessary.

[3] Also see: Kathryn A. Hecht, "The Development of a Chronology of Critical Events," a paper prepared for the Annual Meeting of the American Educational Research Association, San Francisco, California, 1976.

Exhibit 6

DIARY KEEPING[4]

Possible Use: This form of collecting observation data amounts to having students, teachers, or others associated with your program simply keep a log or diary of the events of each day. Such logs can be very useful in determining the amount and "pulse" of activity and can result in the identification of some interesting patterns of behavior. Also, if systematically and continuously recorded and graphed over time, it could be used to predict lulls in program activity.

Students, teachers, or others could keep logs or diaries similar to that below.

Weekly Report

Name _____

Date _____ Project _____

	Total Hours
Teaching	
Conferences (specify)	
Preparation	
Administrative duties	
Other duties	

Comments on specific things done or actions taken in reference to the career education project.

Things done:

Actions taken:

---

[4] Also see: George H. Axinn and Nancy W. Axinn, "The Indigenous Observer Diary-Keeper: A Methodological Note." *Human Organization,* Vol. 28, No. 1 (Spring 1969), pp. 78-86.

Possible Applications

Observation techniques can be used in some manner with both the anticipated and unanticipated aspects of evaluation. The following is a list of possible areas where observation techniques could be used.

- Determining unsolicited perceptions, feelings, and attitudes toward a career education project
- Recording specific responses of acceptance or resistance to a project
- Recording student behavioral outcomes or other responses to activities related to a project
- Keeping track of actions, reactions, and other occurrences from the perspective of the school personnel, and employers of sponsors

This list, although in no way complete, should provide some stimulus for thinking of other areas where the application of direct observation techniques would be useful. One point to remember is that you, as a project director, are naturally going to be observing to a certain extent anyway. Therefore, you might as well systematize the process so as to make the information more useful to the total evaluation plan. Another aspect of the observation process is to assure confidence in the observations you make and record which is discussed next.

Assuring Confidence

One of the major problems that people have with the collection and use of direct observation data seems to be that they feel such data are potentially biased and, therefore, neither valid nor reliable. That is, they don't believe that the methods used to collect the data are controlled enough to (1) actually take a measure of what it is they are supposed to measure or (2) be dependable. This is not necessarily so. Observation techniques are no more or less inherently subject to bias than any other data collection methods—including those used in experimental design. Observation data can be collected and verified in such a manner as to render them both valid and reliable. Below are some points to remember and put into action in order to insure greater confidence in the information you gather.

- Do not become too self-conscious about sometimes having to pretend to participate on occasion in order to gain access to pertinent data. Being too self-conscious could alert the members of the observed group and cause them to react differently than they otherwise would.
- Maintain objectivity about the project. As a project director, you may spend so much time participating that you become more enamored by or involved in the actual participation in the activities than by observing what is going on.

- Remember that the observations you make are dependent on how the group perceives you. Therefore, the observations you make will be limited in this respect.

- Keep in mind that a person's position (even yours as an observer) in a group determines to some extent how he/she perceives any group situation.

- Be careful to act in a way that is not threatening to the members of the group you are observing. Any perceived threat could invalidate or lower the reliability of the data you gather under such circumstances.

- Always attempt to gain corroboration of information and check the reliability of observations made from the testimonies of others who were involved in the incidents on which you have information. A good rule is do not use information that cannot be corroborated by at least one other testimony or set of data.

- Avoid misinterpretation. The picture you obtain using observation techniques is similar to a series of snapshots of a fast-moving event. From these "snapshots," attempts are then made to reconstruct the event. If the "snapshots" have not captured the important shifts of activity or dialogue, there is a danger of reading into the overall picture actions and words that may not have occurred. However, by checking reactions to various events or activities at different times (time and event sampling) and by obtaining corroborating testimony about the observed and interpreted data, you can be quite confident that an adequate description of what did occur has been constructed.

- Do not use diaries or critical event records from untrained persons as primary data sources. This is because of the higher probability of biased information resulting from a combination of inexperience and vested interest in the activity being observed by untrained individuals. Use such information for corroboration, supporting, or elaboration purposes.

- The key to properly analyzing isolated behavior or interaction is making precise category definitions and very carefully recording observations according to those categories. If you have assigned more than one person to observe the same kinds of events or activities, it is important that you review their observations in order to make sure that they are using the same categories and working the same behaviors under those categories. These reviews are necessary to increase confidence in the data gathered.

These procedures are no more cumbersome or time consuming than those steps or procedures that should be employed in order to confirm and insure the validity or reliability of data gathered in other ways. Also, it can be argued that data gathered through direct observation, if

corroborated, is probably the most valid and reliable data that you can obtain because they are generally primary source data. In other words, the data come from the actual event rather than from someone's after-the-fact interpretation of the event.

Interviewing

Definition

The technique of talking with people, or interviewing, is one of the most common forms of collecting information. Probably because of its common use, many people believe that interviewing is merely asking questions of people. Asking questions is naturally a part of the interviewing process, but the success of an interview does not lie in simply asking questions. Obtaining information through interviews requires careful planning and control.

Specific Techniques

The interview situation is set in a milieu of personal, interpersonal, and situational factors. Numerous books have been written on how one goes about doing interviews. In this brief discussion we can only introduce you to some of the major issues. Interviewing, like many of the other systematic observation techniques, is an art-science. That is, there are some basic scientific principles that can guide the interviewer and give him/her reasonable assurance that the information gathered is reliable; however, the specific approaches used are an artful combination of some basic ways to glean information from other people. Once the basics are known, coached practice is the main road to success.

Interviews may vary from informal moments when you have the opportunity to chat with some of the people involved in the project to a carefully nurtured relationship with a reliable person particularly knowledgeable about the situation in question. Because of your many opportunities to formally and informally conduct interviews, you should *always* have in mind some unanswered questions that fit into particular parts of the picture you are constructing to describe the situation under investigation.

Persons associated with the group being studied and with whom you have been able to establish good rapport and a confidential relationship can be of great value to you as you gather information. Generally, the best persons to use for such purposes are those whose positions in the group enable them to view a broad spectrum of activity and comment. You would also want the persons you use to be reasonably articulate about the situations and events in which they become involved.

At the beginning of a project, they can be used to provide you a quick overview of the situation. During the project, they can be used to identify areas that need further exploration or to provide or confirm information from other sources. Informed persons can also be useful at the end of a program when you are putting together certain missing "links" and trying to understand what has happened.

Using two or three informed persons will help you establish the reliability of the data gathered. If at all possible, it is better not to let these persons know of each other--or at least not of the role they are playing for you in providing information about events associated with the project. In this way, they will not feel compelled to have similar stories.

It must be remembered that data gathered from informed persons are still a mixture of primary source, secondary source, and hearsay information. It will be imperative that you carefully analyze and evaluate the information given so as not to attach greater significance to what was said than is warranted.

The discussion that follows divided interviewing techniques into two basic types: unstructured and structured.

Unstructured Interviews. The unstructured interview is probably the most artful of any of the interviewing techniques. It is a purposeful discussion between you and another person, but without specific prestructured questions. The emphasis is on listening as you discuss things that are important to the interviewee within the context of the general concern or focus of the career education project.

The intent of the unstructured interview is to elicit from the person being interviewed a highly personal and detailed account of particular events or sentiments related to the career education project. To do this you must consider a number of complex influences that bear upon the interview situation.

The manner in which you approach or are introduced to the interviewee is important. Remember, interviews are an intrusion on the time and work of the interviewee. You must make sure the interviewee is convinced that you believe his/her information is important to the project. It is also important to establish a good relationship--one of trust and confidence--between yourself and the interviewee. All of this is difficult to establish if the interviewee is rudely interrupted or perceives that he/she is being coerced into being interviewed.

Once the initial contact and relationship has been established, your work has just begun. You must continue reinforcing the relationship while gently and diplomatically probing the interviewee about specifics of the events or sentiments that are brought up.

There are a number of ways to lead, guide, and probe without actually directing what the interviewee says. The following are generally useful steps:

- Find out what the interviewee considers important by asking him/her a question about the general event or situation you are investigating.
- Move from sentiments about this situation or event to associated interpersonal actions.

- After this general overview from the interviewee, get him/her to start at the beginning and go step by step through particular situations or events.

- You can prompt or probe the interviewee in a variety of ways in order to clarify the facts as he/she remembers them.

  - One way is to "play dumb," pretending not to understand certain inferences the interviewee makes.

  - Another tactic might be to take a skeptical air about various statements or actions the interviewee attributes to others. In this manner, you may be able to see if he/she is exaggerating or passing on hearsay. Of course, in using these tactics, you must not lose confidence or trust of the interviewee. Never get into an argument and, in general, do not interrupt the interviewee.

  - Every so often you should restate what you perceive the interviewee has said. In this way, you can confirm your understanding and/or redirect the conversation if the interviewee is getting off on a tangential issue.

- By using some of the techniques discussed above, you should be able to pin down events, people, and times. This information will be valuable to you as you confirm the interviewee's account and further investigate the situation you are studying, perhaps by interviewing the persons referred to by the first interviewee.

- If the interviewee is reluctant to discuss a particular event, one tactic would be to set up a similar but hypothetical situation and have him/her relate the comment to that. Sometimes such a tactic will allow the interviewee to discuss some feelings without divulging what he/she believes might be confidential.

- A final point to remember is to give assurance to the person interviewed that you will hold in strict confidence any comm[illegible]e/she shared with you. Be sure to keep that commitment.

The discussion above, although extremely brief in comparison with what is available on the subject, should provide at least some basic guidelines for you to follow in conducting interviews.

Structured Interviews. The structured interview is basically a questionnaire whose questions are asked by the interviewer either in person or over the telephone. The structured interview technique differs in two ways from the questionnaire or survey technique. In the first place, the questions are personally administered by the interviewer. Secondly, although some of the questions may have categories for response, there will most often be some open-ended questions about which the interviewee is encouraged to share his/her knowledge or opinions. The structured interview has the advantage of being able to pick up a great deal of information in a short period of time.

The questions you ask in structured interviews must be devised with an eye to the "big picture" of your project. This does not mean that you ask only global questions about the project. It does mean that you should keep in mind the project as a whole as you decide what it is you want to find out in the interviews and structure the questions accordingly.

It is important that the questions be written in a manner that will elicit a valid response. To elicit valid responses, they must be written very precisely but also in the language and idioms of the respondents. They should be pilot tested with a few of the respondents and revised accordingly before the questionnaire is finally used. If you have several open-ended questions it may be worthwhile to have the respondents view the questions before you conduct the structured interviews. This will allow the respondents to contemplate the questions and perhaps be able to provide you a more thorough response.

One appropriate time to use structured interviews is when you are interested in obtaining some fairly specific responses to a number of questions after other observation and unstructured interviews. Perhaps, with a broader audience, you will be able to confirm some points about events or sentiments or find out whether some new areas of interest or concern, uncovered through isolated observation or unstructured interviews, are of enough general interest to pursue.

Possible Applications

In addition to using interviews for the purposes already mentioned (to clarify, confirm, or otherwise illustrate), you can also use interviews to gather a variety of other data. By talking to people on a regular and somewhat systematized basis, you can even gather needs assessment or other contextual data. Interviewing can also be used to obtain opinions about certain career education materials or ideas that are being considered for use. One of the best uses for the interview is to obtain some feedback from students, teachers, parents, employers, or others about their reactions to particular career education activities of which they may have been a part.

The interview can also be used to gather information about the impact of certain project activities—most likely their impact on opinions or attitudes rather than on behavior or knowledge. However, some confirmation or checking of their impact on behavior could be made through the use of interviews by asking persons associated with a particular activity what they perceived the impact to be, or, the extent to which they observed certain anticipated outcomes to have occurred.

Assuring Confidence

The first rule of thumb is that interview data tend to be strongest when combined with data from other sources collected through other means. If they reasonably correspond with information gathered through other means and sources, the data from interviews can act both as a reliability check on other data and as supporting or clarifying data.

The validity of interview data can be judged on whether the information is relevant to the intent of the question and accurate from the respondent's perspective. If an interviewee misinterprets a question or feels he/she cannot openly share his/her knowledge or opinions it will mean that the information he/she gives you is invalid. You, as the interviewer, also have some responsibility here. You must be alert to what the interviewee is saying and record the proper response according to your categories of response or record as accurately as possible what it was the interviewee said or did in response to an open-ended question. Data gathered through the use of the interview can be checked for accuracy by others associated with the career education project. If there are discrepancies or inconsistencies between the data presented and the perceptions of those studied, several questions must be considered. For example: Are the discrepancies and inconsistencies the fault of misinterpreted questions or misinterpreted answers? Or are they simply a reflection of the actual ambiguity of the situation investigated? These are difficult questions but ones that may need to be dealt with when you attempt to validate the interview data.

The reliability of interview data has two avenues of concern. If there are several interviewers attempting to obtain comparable data with the same set of structured questions, you'll want to know whether they are recording the answers in the same way. Perhaps the best way to check this is to sit in on some interviews with each of them and discuss them afterward. The other question of reliability is really tied to that of validity and has to do with the trustworthiness of the interviewee. That is, is there corroborating evidence to support the case that the interviewee generally provided truthful information?

Gathering data unobtrusively

Definition

Unobtrusive methods are those data collection methods that do not require direct contact with individuals. Archeologists are probably the most adept in using unobtrusive methods to piece together the culture of a particular situation. Police detectives are another set of investigative persons who rely quite heavily on evidence without the individuals involved being present. Four basic types of unobtrusive methods will be discussed here: physical traces, artifacts, records, and indices.

Specific Techniques

Physical Traces. Physical traces are observable signs of the use of objects or space in a particular setting. Some examples of physical traces in relation to career education projects are physical evidence of wear on books, films and film projectors, areas of the room (e.g., worn carpet or flooring around a particular activity area), and computer printout scraps in the waste basket next to a terminal.

Artifacts. Artifacts are objects or material that can be identified as resulting from human activity. Examples of artifacts in career education

settings are lesson plans, curriculum units, and materials or things developed in conjunction with student projects (e.g., objects made, written material, or some other evidence of student work).

Records. Records such as minutes of meetings, correspondence files, statistics or demographic data, information compiled for such files as accumulative student records, a lesson plan book, or even a grade book can contain important information that can become a part of the total picture you are trying to arrange.

Indices. Indices are what some people refer to as "manufactured" data in that they are contrived comparisons of statistical data such as an index of the percentage of persons with previous work experience in each of several experience-based projects. The ratio of the number of boys to girls in selected classrooms, IQ scores, socioeconomic ratings, and other such ratios are also indices.

Possible Applications

The activities of career education projects could result in some evidence of use of equipment or materials and generate some materials or objects that reflect various aspects of the project. If there is a career information center, several evidences of use and artifacts may be evident. A computer terminal will have automatically recorded all uses. Even the waste basket near the computer terminal might provide evidence of how and for what purposes students were using it. Books, files, pamphlets, and other material, if used, will have signs of use, e.g., "dog-eared" pages, files out of place, papers in files shuffled, and pamphlets in locations other than where they were originally placed. You might even be able to tell where students spend the most time in the career information center by observing where the most litter or dirt on the floor or carpet is located. These, plus numerous other logically connected evidences of use, could become insightful pieces of information, which, when put together with other more direct evidence, would provide a more complete description of what occurred.

Career education projects may also have students produce something. It might be as simple as responding to a set of vocational interest questions or as complex as manufacturing some item to demonstrate some set of manual or cognitive competencies. Teachers and administrators also generate artifacts of programs in the form of lesson plans, curriculum units, and records of planning and accomplishment. All of these can provide insight into the functioning of a project and thus should be considered a legitimate, important, and integral part of an evaluation.

Assuring Confidence in Unobtrusive Data

Relying on evidence of use many times requires a certain level of inference, conjecture, or assumption. One can have confidence in its ability to provide leads and corroborate other self-report or observation data, but it is not often that such evidence alone is sufficient. Materials

or objects produced by students or teachers, on the other hand, are concrete evidence of activity. A difficulty with relying on materials and objects produced is that there may be little evidence as to who participated and over what period of time. However, if artifacts are used as partial data sources of an evaluation and can be logically or empirically linked to other data, they can add tremendously to the concreteness of any evaluation report.

It is desirable to determine the reliability of the unobtrusive data gathered by measuring the outcome in other ways. For example, confidence in information supplied by records and indices comes primarily as a result of the confidence that one can assure in the accuracy and completeness of the records being used. Some corroboration of record data is important--checking the record with persons who were involved in the information recorded or with other records that parallel the same events.

All in all, data collected unobtrusively can provide insightful leads, confirm other data collected, create new data that link existing sets, and otherwise add significant and relevant information to an evaluation.

In summary, how can systematic observation techniques best be used?

One way to talk about the types of information you might wish to collect is in terms of four categories: (1) how often certain events, behaviors, or situations occur; (2) descriptions of incidents or histories; (3) social norms and rules of conduct; and (4) personally held or expressed beliefs and values.

Figure 2 provides a quick reference to the various techniques discussed in this chapter and some judgment as to which of the four categories of information the techniques are best suited. This figure should help you to recall the various techniques and give you a point from which to begin your selection and use of these techniques in your present responsibility.

Figure 2

USE OF DATA COLLECTION METHODS FOR TYPES OF INFORMATION DESIRED[5]

Information Types	Methods of Obtaining Observational Data		
	Observing	Interviewing	Using Unobtrusive Methods
Frequency distributions	Enumeration Isolated behavior Interaction analysis	Generally inadequate and inefficient	Physical traces Artifacts Indices
Incidents and histories	Open-ended Diary keeping Critical event recording	Structured Unstructured Informed persons	Records Artifacts
Social norms and rules	Combinations of all	Combinations of all	Records
Personal beliefs and values	Open-ended Diary keeping Critical event recording	Combinations of all	Records Artifacts

[5] This chart is based on a similar analysis by Morris Zelditch, Jr., as reported in George J. McCall and J. L. Simmons, *Issues in Participant Observation* (Reading, Massachusetts: Addison-Wesley Publishing Co., 1969).

CHAPTER 4

THINGS TO CONSIDER WHEN USING SYSTEMATIC OBSERVATION TECHNIQUES

Introduction

When you are observing a career education project, you should take into account the many things that may potentially affect the outcomes of your observation. For that reason, it is important that a number of issues be thought out, considered, and dealt with prior to and throughout your project. Chief among them are:

- Various issues concerning the nature of data collection and your role
- The manner with which you introduce and maintain contact with the various groups related to the program
- Sources of tension that may exist as a result of conducting the program and evaluating it
- The importance of training and practice prior to observing the program
- Checking reactions to events and activities at various times and places (time and event sampling)

Data collection issues

At the beginning of any evaluation, the question should be asked: Is there any violation of the general right to privacy or a possible threat to the subjects' (people you are collecting information about) physical or mental health? How the data are to be used is critical in this issue. If the information is to be used to evaluate and report on the performance of individuals or an identifiable group, it is generally agreed among evaluators that those evaluated should be made aware of why the information is being collected and how it is to be used. If, on the other hand, the information will not be reported in a manner that identifies individuals or groups or makes their identification possible, permission is generally necessary only from a legitimate supervisor of the individual or group.

The decision to choose a secret or open role is associated to some extent with the previous issue concerning the rights of subjects. In some cases, you may choose to conceal your identity. The use of unobtrusive measures for collecting data makes remaining anonymous quite easy. However, many people find a secret position untenable. Some reports indicate that they begin to feel guilty about collecting information about

people, especially if they know the people very well or are involved with the situation to any extent. This guilt may lead to inhibitions about collecting certain kinds of information and can destroy their effectiveness. In addition, people may share a considerable amount of their personal lives with an observer perceived to be interested and sympathetic. This personal knowledge may become burdensome for the observer and give him/her the uncomfortable feeling that he/she is "putting on" the individuals simply to gather information about the project. Or he/she may feel obligated to become involved with others' personal problems and thereby jeopardize his/her objective position.

For these reasons, it is generally easier to acknowledge your purpose for observation openly to the individuals associated with the project. This means sharing the basic intent, process, and duration of the observation activities.

Although there are numerous other issues that you could consider in observing your project, the final one mentioned here is the accuracy of your collection and reporting. Accuracy is something that you owe the persons being observed and the project as a whole.

You must also be concerned with the issues of validity and reliability. One way of checking validity and reliability would be to have representatives from the groups being studied assess the accuracy of the written description and interpretation of the information before it is reported and used for improving the project.

The point of this brief discussion concerning issues you may face is that a project director must fulfill many roles, some of which conflict at times. Therefore, some tough decisions will need to be made to protect the rights of individuals yet at the same time move the project ahead and provide an accurate record of what transpired.

Being accepted

A point that is often taken for granted is your introduction and identification as an observer. Even though your introductory identification is as the project director, you may choose to fully assume an observer role and hide your project director identity. If you choose this course, it is essential to carefully place yourself into this new role. Some steps you should follow when initiating an observer role are:

- Talk with as many participants as possible
- Initiate non-verbal actions that increase your credibility as a group member (e.g., during a presentation, be seated with the participants rather than alone in the back of the room)
- Do not shift back into the project director role (e.g., clarifying responses to questions posed to others while assuming the observer role).

Before you choose to play the observer role, several issues should be kept in mind. First, if you are well known as the project director, it will be difficult to step into the unidentified observer role. In a larger project where teachers and others involved in the project are not aware of your project director identity, the transition will be easier. Secondly, it is important not to confuse people as to the role you are playing by changing your role midstream. Third, it is normal behavior for individuals in an established group to be curious and possibly even suspicious of persons who come into their midsts either unannounced or vaguely announced. Such an uncertain relationship could easily invalidate data collection or stifle or change the activities to be observed.

In order to alleviate anxiety in systematic observation situations, it is important that your entry be through the recognized social protocol. This might be through the principal of a school, the superintendent of a district, the chairperson of a particular department, or a particular teacher. Again, even if you are somewhat known by the people but do not see them continuously, it is important to follow some form of sound protocol so that they do not get the feeling that they are being snooped on or harassed. It is important that the persons in the group do not feel coerced into accepting you. Therefore, for instance, you must be careful that the desires of the department head(s) are not overridden by the principal or superintendent.

Overall, you must be very careful at the outset and then continually check to determine whether you are being accepted by the group for the purposes initially outlined to them. One thing you should prepare yourself for is that in times of conflict the members of a group may find it easy and advantageous to blame their problem(s) on the project, on the activity, or even on you. Such an occurrence will call for some extremely diplomatic action on your part in order to reestablish your position with the group.

Other sources of tension

From reading some of the other material in this handbook, you may have decided that doing evaluation by using systematic observation techniques can be somewhat hazardous. We are not trying to scare you off but to establish an awareness and sensitivity to evaluation work among individuals and groups. If you meet people easily and are aware of the variety and intensity of interpersonal relationships, you should be relatively at ease in using the systematic observation approaches suggested in this handbook.

The intent of using systematic observation techniques is to record what actually occurred in a particular event or situation. To do this requires utmost attention to all that is occurring. Such activity is intense and exhausting. With practice, you can pace yourself and determine how many observations should be made and how long and frequent they should be to maintain optimum effectiveness. You will also become more adept at interviewing so that you don't spend inordinate amounts of time on tangential details or obviously irrelevant discussion.

In addition to the strenuous physical and mental effort, other critical aspects of working with groups of people are the political and interpersonal relationships that can inadvertently throw you off the track or bias your judgment. Knowing this does not always alleviate the problems that may arise. However, in general, if you know the political and interpersonal factors of a group, you are less likely to make serious mistakes simply because you talked to the wrong person at the wrong time or said the wrong thing to some individual. Your success will be largely dependent upon whether people feel that you can be trusted with the information they volunteer or you observed, as well as with information that may have been gathered without their specific and direct knowledge.

Training and practice

The effective use of systematic observation requires considerable practice. It is practice that seasons and forms the raw material of knowledge into something usable for career education program improvement.

Without some planned and controlled practice, you get yourself into some very embarrassing and personally harmful situations. For example, one article[6] reports that a student doing a study about coffee break activity in a county office created a minor political crisis between the office and a local taxpayers association. The association obtained some of the information and interpreted it as indicating that county employees were "under-worked and over-coffeed." In another situation, a rookie investigator concluded that the actual activities of a particular service club in a small town was "bulling and boozing." Needless to say, the members did not appreciate this sort of remark, and let the student, professor, and administration of the college know about it. The results were harmful for all concerned.

What we are saying, then, is that a person must have practice and perhaps even some supervision experience in real settings in order to develop, modify, and integrate a style of observation with which he/she is comfortable and which facilitates completion of the activity without harmful effects. Although it is relatively difficult for a project director to be able to receive direct supervision of his/her observation efforts, it is possible to receive feedback through other means, such as:

- Observing a project as someone else is independently, but simultaneously observing the project and comparing the findings for accuracy
- Observing a project and comparing your findings with other evaluation measures (e.g., questionnaires) for accuracy
- Observing a project and comparing your findings with the person(s) running the project for accuracy

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[6] James E. Myers, "Unleashing the Untrained: Some Observations on Student Ethnographers," *Human Organization*, Vol. 28, No. 2 (Summer 1964), pp. 155-159.

- Observing a project and receiving feedback from the person(s) running the project for feedback regarding your style

- Observing a project and interviewing participants and then comparing the findings for accuracy

Sampling

It is impossible to record all the behavior that occurs in a particular situation. Therefore, it is necessary to make some choices about what is to be observed and how it is to be observed. Particularly when using direct systematic observation techniques, the intent is more descriptive than experimental. Therefore, random sampling is generally not appropriate in descriptive evaluation studies—the kind of study for which you are most likely to use observation techniques. The reason is that it is very unlikely that every person, event, or other element in a given evaluation situation would have the same likelihood of contributing to the study.

There are three sampling techniques appropriate for use with systematic observation. One is "quota-sampling." With this method, it is assumed that any organization, group, or situation being studied is made up of various people in different roles and the various events that comprise the activity of these people. To determine the sample, you first find out what proportion of the total group is made up of individuals in each role. (You can also find out what proportion of a situation is made up of particular types of activities.) Then you can put together your sample by including in it persons (or activities) in the proportions in which they occur in the organization or situation as a whole. The information you gather from the sample may reveal the need for additional categories or modifications of those first set up.

A second sampling approach is the "snowball sample." In this approach, you select one or only a few informed persons or do some limited exploratory observations. Information gathered through these initial contacts generally provide leads to other persons or events to be observed, and so on. In this way you can concentrate your attention on the most promising leads.

A third approach to sampling is the "search for expectation." Using this technique, you first assume certain relationships between persons, events, or variables. For example, you might assume that juniors and seniors in high school would be much more interested and active in seeking out career information than freshman and sophomores are. Using this sort of assumption narrows the range of persons and events that one would sample.

Most persons who use systematic observation techniques employ a combination of these three sampling techniques in the process of selecting who to talk with or listen to and what to observe or read.

Sampling and justification for the data used must be dealt with continually. There is constant concern for sampling such things as:

organizational characteristics; events; peoples' knowledge, attitudes, and behaviors; roles of individuals; documents; and many other aspects of the situation being observed.

Your unique role

As the project director, who you are, how you are perceived, and what you do, are critical factors in the observation process. Thus, it is very important that you understand your unique role in this process.

Let us take a look at one way to view the dynamics of a situation to be observed. Figure 3 provides a graphic representation of the basic elements that play a role in any change situation. There are those who are, in a sense, in charge of or advocating or facilitating the development, trial, or adoption of a particular career education program, project, or activity (the Fs in Figure 3). You may see yourself, or others may see you, as part of this group. There is the innovation (I) or change—the career education program, project, or activity itself—with its objectives, materials, procedures, and so forth. Then there are the consumers (Cs), those who are being called upon to use or become involved with the change.

Both the Fs and the Cs have their own perceptions concerning the "I." In addition, there will be a large number of interactions that will occur between the Fs and the Cs—some about or associated with the "I" and others not related. All of these things will take place within a social milieu of anticipated and unanticipated factors.

Figure 4 illustrates three fundamental role positions you might find yourself in as an observer. You may be an outsider (represented by a 1 in Figure 4) or may be perceived to be an outsider. This perception may occur even if you have been a part of the group and still feel yourself to be. This can happen if you have become a project director within the school in which you have been teaching or counseling or have been shifted to work with schools in which you have not been a part. You might also be within the general context of the situation represented by a 2. For instance, you may be an administrator or curriculum coordinator at the district level, but not directly involved in the administration of the particular career education project. On the other hand, you may be in the midst of it all (represented by a 3). You may be the project director, or an assistant project director, or someone who is an actual participant in the career education project.

Whatever the case may be, each role will carry with it different expectations on the part of those with whom you must interact to obtain information. The role we have most often referred to in this handbook is that of 3.

Another thing that you must determine is whether you see your role in the way others see it. If not, serious problems may result as the project is planned, implemented and evaluated.

Figure 3

DYNAMICS OF A CHANGE SITUATION

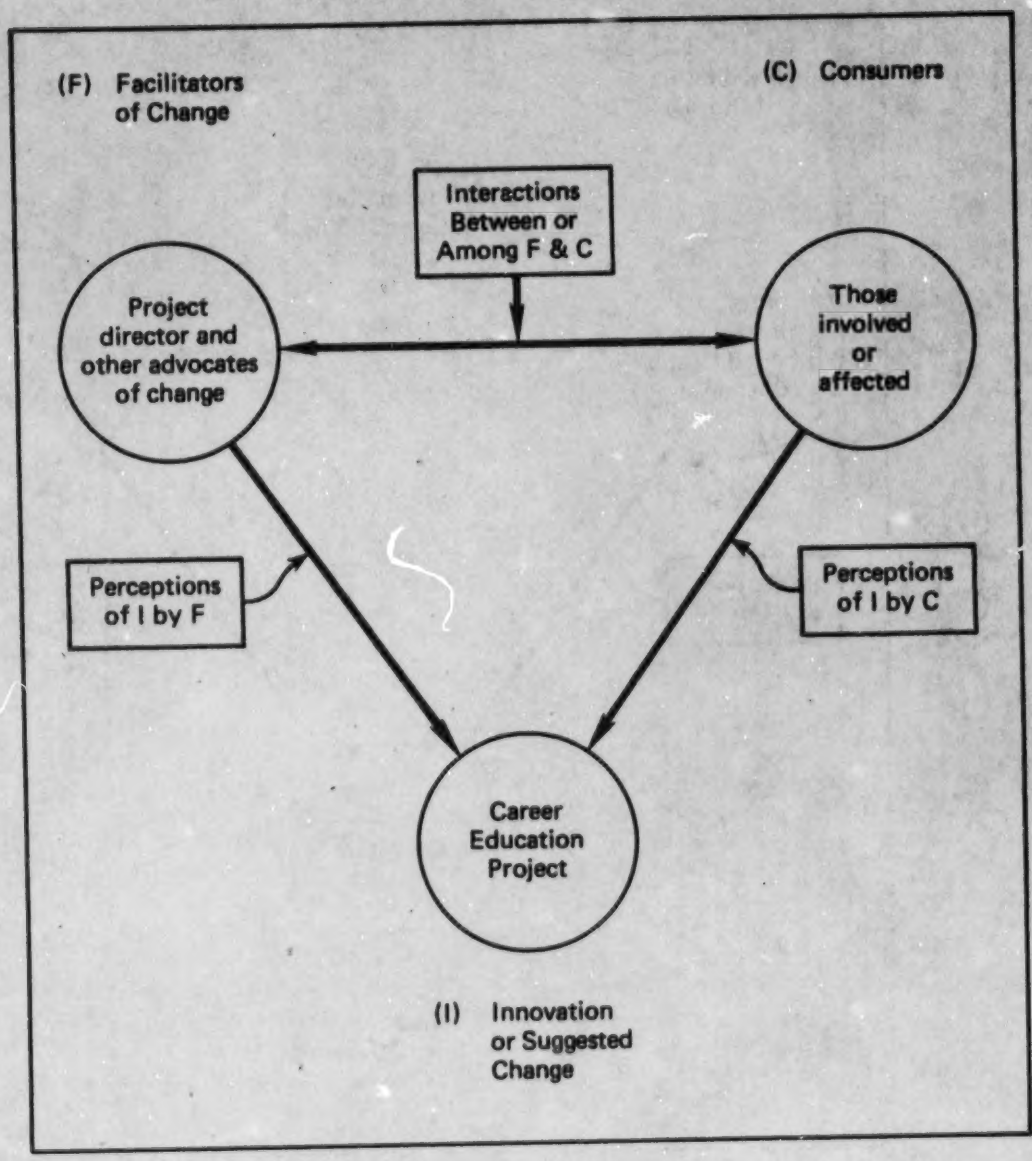
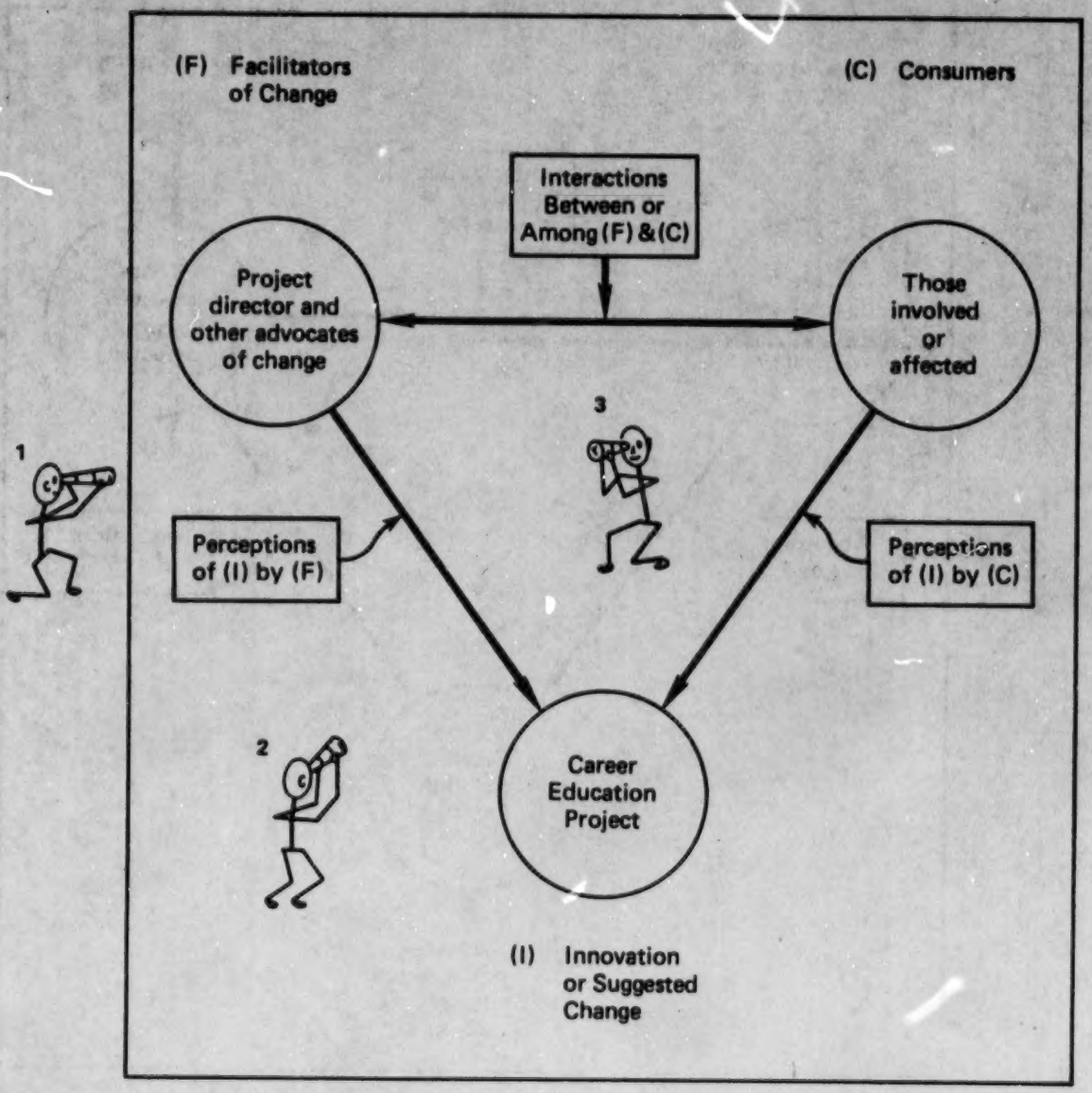

(F) Facilitators of Change
(C) Consumers
Interactions Between or Among F & C
Project director and other advocates of change
Those involved or affected
Perceptions of I by F
Perceptions of I by C
Career Education Project
(I) Innovation or Suggested Change

Figure 4

YOUR ROLE AS AN OBSERVER



Observer Roles

1. External—third party, or perceived outsider
2. Internal to the "system" but not part of project
3. Internal to project—possibly an (F) or (C)

The important thing to remember in reference to this discussion of your role in the observation process is that in almost all cases, except that of the unobtrusive data collection processes, you have a potential influence on the situation. Therefore, you must be diligent in systematically checking to see what effect you may be having and make appropriate modifications.

CHAPTER 5

HOW TO ORGANIZE, ANALYZE, AND JUSTIFY THE USE OF SYSTEMATIC OBSERVATION DATA

Introduction

In the previous four chapters, we have attempted to outline some of the basics of collecting systematic observation data. This chapter presents specific exercises you can use to develop your systematic observational abilities. There are, however, some other tasks for which you must prepare if you are to effectively use any data collected through the systematic observation techniques discussed thus far in this handbook. These tasks are organizing, analyzing, and preparing a justification for the inclusion of any observation data in an evaluation report.

Organizing your data

Data collected through the use of systematic observational techniques can become rather unwielding unless they are systematically recorded and organized. In any attempt to collect systematic observation data, you will probably use several people and a variety of techniques. As you may have already imagined, systematic observation data like this will pile up very quickly. You will need a filing system that holds the various systematic observation information and data until they are analyzed. This filing system can be organized by type of systematic observational report (e.g., observation, interview, or unobtrusive data). Or it could be organized by events or segments of the project being directed and evaluated. Whatever the basic organization, the best way to arrange reports within the categories is chronologically. Patterns of behavior may occur over time and it is important to know when what happened.

Analyzing your data

Analysis of systematic observation data should occur periodically throughout the duration of the project. In order to obtain the most benefit out of the data or to organize yourself for continuing or following up leads in the data, you must analyze all data present on a somewhat regular basis. Many who work with systematic observation data do so by themselves. In a career education project, however, you will probably have several persons to assist you in directing and evaluating. If you do have assistants working closely on the program, as a group you could periodically (e.g., once or twice a month) sit down and gather together all the systematic observation data, along with other data you might have available and attempt to derive some tentative hypotheses about what is happening in the program. It is extremely important not to come to conclusions too quickly. One way to put this is "to let the data speak to you." Don't read into the data conclusions that you "feel" are emerging.

After a good analysis of the data and development of a list of tentative hypotheses, ask yourself whether there are areas that were left unexplored. Then set up a continuation schedule for systematic observations, making sure that you follow up on hazy, missing, or conflicting information about what appeared to be an important event. Also make plans to do systematic observations in areas less explored in order to maintain a broad view of the program and not become locked into one aspect. Be sure not to discount some things you are observing such as department meetings just because nothing related to your program has come up recently. You may be surprised to learn that, although they were not directly related to your program, some of the discussions did impact either positively or negatively on your program. One attitude that persons who use systematic observation methods take is that in any social setting any aspect or event in the setting in some way affects all other aspects of it. Although it may be difficult to see in any single observation or even a collection of observations, over time and with carefully recorded observations, this fundamental assumption usually holds.

Justifying systematic observation data

Many people will say that it is all well and good to use systematic observation data for your own work in conducting a program but that there is really no way it can be used objectively in an evaluation report. This is simply not true. As has been pointed out in discussing each of the three categories of observation techniques, there are ways of assuring that you have information that accurately reflects what did occur. In any justification of data used in any evaluation effort, it is important to detail the procedures used to collect, organize, and analyze the data. Having your systematic observation records well organized and open for inspection by those sitting in judgment of the data or report will go a long way toward convincing them of the accuracy of the data.

Another way to convince the reader of the report of the accuracy of systematic observational data is to write the report in language that reflects what was observed to have happened. Of course, you will also have to spell out when it happened and include your reasoning to back up your interpretation of the data.

You will want to avoid writing systematic observation reports as if your interpretation is the only possible one. In the presentation of any data for evaluative purposes, the conclusions are still the perogative of those reading the evaluation report. What you want to do is to provide the most accurate description and interpretation of events and outcomes as you were able to record them. Anecdotes, references to times, places, and records on file will all help convince any reader that the data you present are an accurate and reasonable interpretation of what did occur with the program. No "level of statistical significance" is any more convincing.

CHAPTER 6

ENHANCING YOUR SYSTEMATIC OBSERVATION SKILLS[7]

Introduction

Your success as a project director, an evaluator, or a teacher depends in large measure on your ability to observe carefully what is going on around you, concisely noting that behavior, analyzing it in relation to other observations that have been noted, and then evaluating the information in order to make an appropriate response. Such skills require that you be able to separate fact from feeling. In other words, you must be able to separate the behavior you observe from the subjective impressions you have about that behavior. Both the objective fact and the subjective interpretation are important, but it is also important that you be able to distinguish between the two and likewise record the two accounts in a parallel but separate manner. To do this requires training and practice. In this chapter, we hope to provide you with some thinking material and exercises that could lead to a better understanding and a capacity to actually see and record what goes on in social situations, particularly in those settings associated with schools.

The chapter is divided into four sections. The first deals with improving basic systematic observation skills. The second, third, and fourth sections look at how you can analyze your systematic observations, which we hope will alter some of the patterns or "ruts" we all get into when doing systematic observation.

Improving basic systematic observation skills

Generally, when we observe, our attention wanders or we only catch a part of what is going on, or we get so involved in what is going on we begin to take sides and make value judgments about what is being said and done. Before going on in this chapter, we challenge you to get into a classroom situation, a meeting, or any social event and for about ten minutes or even five minutes record all you can about what goes on. Try to separate what actually goes on from your feelings about it. Use a form similar to Figure 5 to record these observations. In order to get it all down, make up little "shorthand" notations for particular persons, actions, phrases, and words.

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[7] Much of the design and basic ideas of this chapter are a condensed version of work done as a result of the "Developing Observational Skills: Project in Ethnography in Education" at the State University of New York at Buffalo.

Figure 5

SAMPLE FORM FOR RECORDING OBSERVATIONS

Narrative (Actually Observed)	Notes (Feelings, Impressions, etc.)

Once completed, your first observations might look like those in Figure 6. How do you compare? Do you think that the observations in Figure 6 are good and fairly accurate? No? You are right. There is too much of a mixture of feelings on the narrative side of the reported situation. Look at Figure 7. The observations are much more accurate when recorded in this manner.

Now look at your first observation record. Is it complete? Does it contain feelings and impressions on the narrative side? If so, reorganize your observation record. If you have an opportunity, have someone else critique your observation record for the separation of objective fact from feelings or impressions about the situation.

Now do another or even several observations of five or ten minutes' length and go back and analyze them in the same manner. You will begin to get some insight into the way in which you personally look at events. It would be helpful if at least one other person could make the observation with you. By comparing observation records, you will see how each person tends to look at situations just a little differently. Such analyses can help you become a much more accurate and comprehensive observer of human events. After some practice at this level of observation, you are ready to dig deeper into your observational skills.

Changing your patterns of systematic observation

Once you begin to get the basics of observation down, you may begin to realize that you tend to observe certain things about a situation. Additionally, you may notice that others have certain patterns of things that they observe, which are either similar to or quite different from yours. In this section of the chapter, we want to determine whether you really do have patterns in your observational reports.

Go back to some of your previous observation records. Now review each observation comment or entry. You can usually categorize these as being either an observation of some *verbal comment*, a *non-verbal comment*, or some *use of space* by a person. Using one of your observation records, categorize each entry as either verbal, non-verbal, use of space, or other. For example, the entries in Figure 7 could be categorized as indicated in Figure 8.

You will probably find that most of your observations are of verbal behavior as in Table 1. The second most observed behaviors tend to be non-verbal, such as facial expressions, gestures, and body movements or positions (e.g., facing, standing, sitting). Beginning observers usually place less emphasis on the use of space as pertinent information.

By periodically analyzing your observational records in this manner, you should become more aware of your observational patterns and, if necessary, be better able to balance your observations among these rather than standard categories of observable actions. Some actions that might fall into the "other" category could be coughing, sneezing, or thinking. The important thing to strive for here is not the systematic or completely

Figure 6

SAMPLE OBSERVATIONS OF A CLASSROOM

Narrative (Actually Observed)	Notes (Feelings, Impressions, etc.)
1. Teacher (T) called the roll.	
2. Some kids were still talking and disrupting the class.	
3. Teacher (T) threatens one student by telling him she would give him a bad mark.	The student was quite defiant.
4. T finished the roll.	
5. T ask class to take out their career planning workbooks.	
6. Most did but some were reluctant.	It seems that that the kids in general don't like this class.
7. T asked them to turn to their homework assignment in a rather rough tone of voice.	The teacher is somewhat grouchy.
8. One girl asked if they could have extra time to get their homework done.	
9. The teacher looked at her kind of mean, walked right over to her and told her "definitely not."	

Figure 7

REVISED SAMPLE OBSERVATIONS OF A CLASSROOM

Narrative (Actually Observed)	Notes (Feelings, Impressions, etc.)
1. Teacher (T) began the class by calling the role.	
2. Many of the students were still talking while she called the role.	The class was very disruptive. I could hardly hear the names called.
3. Two students in the back of the room were talking quite loudly and lightly hitting each other on the arm back and forth across the row.	
4. T calls out specifically to one of the boys (Tom) and said, "If you don't stop that I am going to give you a red mark today."	It seems that T gives these "marks" as a kind of disciplinary demerit.
5. The boys did stop their hitting and talking.	
6. Once the roll was finished, T asked the class to take out their career planning workbooks and turn to the page of yesterday's assignment.	
7. Most did while a few continued talking or simply sat doing nothing.	There seemed to be a non-responsiveness and even reluctance to get going in this class.
8. One girl spoke up and asked, "Can I have more time to finish the assignment?"	The teacher looked right at the girl and gave her a real mean look.
9. T walked over, stood next to the girl's desk, and looked right at her.	The teacher was very brusk in the tone of her voice.
10. T then said, "It was homework and should have been done at home and not in class."	I was beginning to feel very uncomfortable in the class.

Figure 8

CATEGORIZED ENTRIES FROM FIGURE 7–TYPE OF BEHAVIOR

Entry No.	Verbal	Non-Verbal	Use of Space	Other
1	X			
2	X			
3	X Students talking	X Lightly hitting	X Back of the room, back and forth across rows	
4	X			
5		X		
6	X			
7	X	X		
8	X			
9		X Stood and looked	X Walked over	
10	X			

accurate categorization of your observations, what you are after is to increase your awareness of what it is you are concentrating your attention on during the observation session.

If you find an imbalance, you need to ask yourself the question: Are there other things going on in those situations I am observing that I am not picking up and that are equally or at least reasonably important to the total understanding of what is going on? It may be that the most important thing to focus on is the non-verbal action and interaction that is occurring. In another case, it may be the use of space that is most important. There is no particular virtue in gathering information on all aspects of the situation. What will be important in an actual observation/recording session is that you be aware of what it is you actually want to know about the situation and that you concentrate on capturing that.

Do your values get in the way?

All of us have opinions and hold certain values about what is appropriate or inappropriate behavior and what kind of behavior can be expected in certain situations. In this segment of the chapter, you will have an opportunity to examine your values concerning the behaviors you observe.

Start by obtaining a 15- to 20-minute observation of a classroom. Once you have the observation record, analyze it by indicating whether you feel that the behaviors you observed are "usual" (you would have expected them) or "unusual" (you really would not have expected that kind of behavior). Figure 9 gives an example of how a person might classify the observations in Figure 7. It will help if you can work with one or two other persons who have observed the same situation so that you can compare your observations and judgments.

Over time and among a number of observers you will generally find that some people focus more on usual or expected behaviors, whereas others focus on unusual or unexpected behaviors. Knowing where you stand in terms of your focus is again useful information when you are recording observations for evaluative purposes.

To go one step deeper with this exercise, you could make a further judgment concerning the observed behaviors by indicating whether you feel the behavior is "very desirable," simply "okay," or "it should be changed." Such an analysis could further assist you in clarifying your values in reference to what you tend to observe. It seems that some observers concentrate on behaviors they believe should be changed. Others pay more attention to those behaviors they find agreeable. You might think that the judgment of usual or unusual would give you the same result as classifying the behaviors as agreeable, okay, or disagreeable. In some cases, there may be considerable parallel. In other cases, you might judge some behavior as highly unusual but, from your perspective, very desirable. In fact, you might be the kind of person that particularly looks for those unusual but highly desirable behaviors.

Figure 9

CATEGORIZED ENTRIES FROM
FIGURE 7—USUAL/UNUSUAL BEHAVIORS

Entry No.	Usual	Unusual
1	X	
2	X	
3		X
4	X	
5	X	
6	X	
7	X	
8	X	
9		X
10	X	

Test it. Find out for yourself. What do you pay attention to? Is there evidence in your observations that your selection of behaviors is guided by your values or predisposition concerning what you enjoy picking out among all the possible observable facts within a given situation? You'll never know unless you try it.

Other factors

Another way to analyze your observations is by looking at the frequency with which you observe certain persons in a group. Or do you tend to do most of your observing within a particular section of a room? Another thing to look for is whether you tend to observe particular roles of individuals. For example, do you consider it unusual or inappropriate when a student does the teaching in a class? Do you have particular role expectations in your mind, and do these influence the manner in which you record events?

All of these analyses are very important in the development of your observation skills. Analyzing your observation patterns in these ways will not only enhance your observational abilities, but can also contribute to a better understanding of who you are, what you believe, and why.

CHAPTER 7

SUMMARY

Why use systematic observation techniques?

This handbook was designed to be a practical guide to help you, the career education project director, undertake your evaluation responsibilities. Realizing that you may not have the time, resources nor expertise to conduct an extensive evaluation, we have introduced three systematic observation techniques:

- observing verbal and non-verbal behavior
- interviewing
- gathering data unobtrusively

By using systematic observation techniques, you should be able to obtain information about your project that will help you to:

- make decisions about the most valuable aspects of the project
- identify problem areas before they become critical
- discover unintended outcomes and influences of the project
- develop a comprehensive picture of what happened and a clue as to why it happened

The checklists

Some of the techniques included in this handbook may not be entirely new to you. For example, the use of interviews and anecdotal records are often used. However, you may not be conversant about the use of other techniques and how you can systematically plan, implement, and use them in evaluating your career education project. Thus, this handbook presented information in the step-by-step sequence of planning, implementing, and using data from systematic observation techniques. In addition, this chapter presents a series of nine checklists for use in reviewing the information covered in the handbook. They will also help you plan your systematic observation efforts whenever you evaluate your project. The checklists will then "walk through" the process of planning, implementing and using data from systematic observation techniques by

raising key issues. Incidentally, don't forget the checklists also provide references to pertinent sections of the handbook to aid in your review, selection, and use of appropriate systematic observation techniques.

What can be evaluated?

The first step in any evaluation effort is determining what should be evaluated and why you want to evaluate it. This, of course, holds true when using systematic observation techniques. The information you will be collecting and presenting will largely concern the outcomes of your project or any portion of it. (Outcomes aren't considered to occur only at the end of a project; they can be defined incrementally so that they can occur at all logical points during the conduct of the project.) You will be trying to find out whether your project, or parts of it, accomplished the objectives you intended. However, when determining what you will evaluate it is important to remember that projects often have both anticipated and unanticipated outcomes. That is, while we usually evaluate a project based upon the accomplishment of its objectives, we should also consider any unanticipated outcomes. If no attempt were made to look for unanticipated outcomes, they would simply go unnoticed or be so vaguely referred to in impressions from other data sources as to be of no value to you. Together, they reveal a more complete picture of the project's effects.

In addition to outcomes, there are also anticipated and unanticipated influences that can affect the conduct and perhaps outcomes of the project. Both of these influences can be useful in explaining what happened as a result of your career education project.

Used conscientiously and systematically, the techniques discussed in this handbook can assist you is determining the effect of anticipated influences and to what extent anticipated outcomes occurred. They should also provide information leading to the discovery of unanticipated outcomes and influences. Now let's see if systematic observation holds any promise for your career education evaluation efforts. By completing the following checklist, you will identify which outcomes of and influences on the project can be evaluated.

Checklist 1: What Can Be Evaluated?

Are you interested in:

	Yes	No	N/A	Page References
• Anticipated Outcomes?				5-8
• Unanticipated Outcomes?				5
• Anticipated Influences?				5-8
• Unanticipated Influences?				5-6

Systematic observation techniques

Three major systematic observation techniques are available to you when evaluating your project. They are observing, interviewing and gathering data unobtrusively.

- **Observing**

• Observing is a primary and fundamental technique that undergirds all of the others discussed in this handbook. In fact, one could easily make the case that all forms of data collection are simply derivatives of observation. By observing people, information such as feelings toward the project, acceptance or resistance to the project, and student behavioral outcomes may be obtained. Several observation techniques are available to help systematize your observations:

- Open-ended observation could be used to keep track of what is occurring in the project when little or no structure is being used to guide the observation.
- Interaction analysis is a way of describing what goes on in a learning environment or setting by coding the observations by categories and preparing a matrix to interpret the observations.
- Isolated behavior enumeration could be used when you have rather specific singular behaviors you desire to enumerate.
- Mapping actions is an observation approach to recording the movement of all or certain persons in a group.
- Critical event recording is simply a means of recording any event or incident that may have had potential influence on the project.
- Diary keeping requires that students, teachers, and others associated with your project keep a log or diary of events each day.

You are ready to determine if any of these techniques are appropriate for evaluating your project. Checklist 2 provides a format for making this determination.

Checklist 2: Observation Techniques

Which of these techniques are appropriate:	Yes	No	N/A	Page References
• Open-Ended Observation				11
• Interaction Analysis				12-15
• Isolated Behavior Enumeration				16
• Mapping Actions				17
• Critical Event Recording				18-19
• Diary Keeping				20

One of the major problems that people have with the collection and use of observation data is that such data are potentially biased and therefore neither valid nor reliable. However, observation data can be collected and verified in such a manner as to render them both valid and reliable. Checklist 3 presents some points to be kept in mind in order to insure greater confidence in the data you collect.

Checklist 3: Assuring Confidence in Observation Data

Will the observer insure that he/she:	Yes	No	N/A	Page References
• Does not become too self-conscious about pretending to participate on occasion to obtain pertinent information				21
• Maintains objectivity about the project				21
• Remembers that observations are dependent upon how the group perceives the observer				22
• Remembers that a person's position in a group may affect perceptions of any group situation				22
• Acts in a non-threatening way toward members of the group being observed				22
• Attempts to gain corroboration of observation information to check the reliability				22
• Avoids misinterpretations				22
• Does not use diaries nor critical events records from untrained persons as primary data sources				22
• Makes precise category definition				22
• Carefully records observations according to these categories				22

- **Interviewing**

• Interviewing, or talking to people, is one of the most common forms of collecting information. Because it is commonly used, many people believe that interviewing is merely asking questions of people. Interviews may be used to clarify, confirm, or illustrate. They may also be used to obtain opinions and feedback from students, teachers, parents, employers, etc. For example, at the beginning of a project, interviews can be used to provide you a quick overview of the situation. During the project, they can be used to identify areas that need further exploration or to confirm information from other sources. When the project is completed, they can be used to gather information about the impact of certain activities. Interviews are usually classified into two types: unstructured (a purposeful discussion between two people without specific prestructured questions) and structured (a questionnaire asked of a respondent either in person or over the telephone). Whether you choose to use unstructured and/or structured interviews, you should remember that interviewing is more than merely asking questions of people. Although asking questions is naturally a part of the interviewing process, the success of an interview does not lie in simply asking questions. Obtaining information through interviews requires careful planning. You are now ready to determine if either of these techniques are appropriate for evaluating your project. Checklist 4 provides a format for making this decision.

Checklist 4: Interview Techniques

Which of these techniques are appropriate?

	Yes	No	N/A	Page References
• Unstructured Interview				24-25
• Structured Interview				25-26

As was the case with observation techniques, interview data can also be potentially biased. The successful interview requires careful planning and control. Confidence in your interviews can be assured in several ways. For example, interview data tends to be strongest when combined with data from other sources collected through other means. Also, the validity of interview data can be judged on whether the information is relevant to the intent of the question and accurate from the respondent's perspective. Thus, a number of precautions need to be taken so that you will have confidence in your interview. Checklist 5 identifies points you should consider in order to obtain more valid and reliable information from your interviews.

Checklist 5: Assuring Confidence in Interview Data

Will the interviewer insure that he/she:	Yes	No	N/A	Page References
• Carefully plans and controls an interview				23
• Uses more than one informed person to supply information in order to improve the reliability of the data				24
• Keeps the identify of the informed persons anonymous				24
• Identifies the data gathered as primary source, secondary source or hearsay				24
• Obtains information on sentiments about a situation and associated interpersonal action				24
• Goes step by step through particular situations or events after the general section of the interview				25
• Probes the interviewee in a variety of ways				25
• Pins down events, people and times				25
• Assures the interviewee that the information will be held in strict confidence				25
• Combines information from the interview with other sources to increase validity and reliability				26
• Records the interview data accurately according to the categories of responses				27
• Checks consistency of responses across interviewers				27

- **Gathering data unobtrusively**

• Unobtrusive techniques are those data collection techniques that do not require direct contact with the individual. Several techniques are available, including physical traces, artifacts, records and indices. Checklist 6 provides a format to help you select the appropriate unobtrusive techniques for your project.

Checklist 6: Unobtrusive Techniques

Which of these techniques are appropriate?	Yes	No	N/A	Page References
• Physical Traces				27
• Artifacts				27-28
• Records				28
• Indices				28

One can also have confidence in data collected unobtrusively in that it provides leads and corroborates other self-report or observation data. It is not often that unobtrusive evidence alone is sufficient. As with the other systematic observation techniques discussed, certain precautions should be taken when you gather data unobtrusively. Thus, there are several points that should be addressed in order to increase your confidence in this data.

Checklist 7: Assuring Confidence in Unobtrusive Data

The evaluator will insure he/she:	Yes	No	N/A	Page References
• Determines who participated in the event studied				29
• Determine the period of time over which the event occurred				29
• Corroborates the data by using other techniques to measure the event				29

Things to consider when using systematic observation techniques

When using any systematic observation technique you should take into account the many things that potentially affect the evaluation. These include data collection; being accepted; sources of tension; training and practice sampling and your role. These points were discussed in the handbook and are presented in Checklist 8. By reviewing these points as you plan your systematic observation, you will gather more quality information.

Checklist 8: Things to Consider When Using Systematic Observation Techniques

Have you considered:	Yes	No	N/A	Page References
• Will the privacy rights of individuals be protected?				31
• Will the observer's identify be revealed?				31-32
• Will the observer's identity be concealed?				31-32
• Will the data collected be reliable?				32
• Will the data collected be validated?				32
• Will the observer be accepted by the group?				32-33
• Will political or interpersonal relationships affect the systematic observation?				34
• Will the observer have an understanding of systematic observation techniques?				34
• Will the observer have practice with systematic observation techniques?				34
• Will sampling methods be used?				35-36
• Will the project director be certain of his/her role in the systematic observation process?				36-39

How to organize, analyze, and justify the use of systematic observation data

In addition to planning and collecting systematic observation information and data, you must also prepare to use it effectively. These tasks are organizing, analyzing and preparing a justification for the inclusion of any systematic observation data in an evaluation report. This handbook raised several points that affect organizing, analyzing, and using systematic observation data. They are highlighted in Checklist 9.

Checklist 9: How to Organize, Analyze, and Justify the Use of Systematic Observation Data

Have you considered:	Yes	No	N/A	Page References
• Designing a filing system to hold systematic observation and information data until they are analyzed?				41
• Analyzing data on a regular basis rather than after they are all collected?				41
• Generating hypotheses from the information and data?				41-42
• Scheduling additional systematic observations to clarify hazy, missing, or conflicting information?				42
• Writing the procedures used to collect, organize, and analyze data in the evaluation report?				42
• Writing the evaluation report in language that reflects what was observed and why it was interpreted as such?				42

It's up to you!

The information presented in this handbook was designed to help you systematize what you do daily—observe. By using the techniques discussed in this handbook the information you obtain will move from "gut feelings" to evaluation information that is a part of your overall evaluation plan. Systematic observation can hold a special place in your evaluation plan because it allows you to obtain evaluation information as an activity occurs at a relatively low cost. Becoming a "trained" observer only takes practice. The more you practice, the more informative your systematic observations will become.

The evaluation techniques you choose for your project will vary based upon your information needs and resources. We have tried to introduce you to some techniques which are based upon observation rather than being based solely upon paper and pencil tests. You can use one systematic observation technique or a combination of systematic observation techniques, the choice is yours.

The steps in the systematic observation process are not difficult. A quick review of the checklists should confirm this. But, the rewards are plentiful. With a little advanced planning and a little practice, you can use systematic observation techniques which require little time, staff and money to gather a wealth of information about your project. Well, it's now up to you.... Happy Observing!

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